



Center for Innovation
in Product Development

Center for Innovation in Product Development

Massachusetts Institute of Technology

Innovation in Product Development— New ways to define, design, and deliver products and services

A National
Science
Foundation
Engineering
Research
Center
since 1996

The mission of the Massachusetts Institute of Technology (MIT) Center for Innovation in Product Development (CIPD) is to advance the theory and practice of product development by combining the best ideas and experience of industry with those of academia. CIPD envisions developing an integrated approach to research, educational, and outreach activities to assist U.S. industry in a number of areas, including: (1) development processes, tools, and techniques; (2) project team organization and management decision-making; (3) project portfolio management, technology management, and infrastructure and information management; (4) product strategy process; and (5) capability improvement. The Center's goal is to assist industry in achieving the highest levels of customer satisfaction and product value and to ensure long-term vitality and profitability.

Research

To help companies define new products, develop a better understanding of the product development process and the relationship between effective product development and organizational and competitive contexts, as well as to help companies improve practices, processes, and technologies, CIPD has organized its research into four major thrusts.

Thrust 1—Designing Successful Products

This research thrust will provide processes to define new products that will delight customers with minimum complexity and costs. As a result, customers will have excellent product options, close to their personal needs, while corporate costs are constrained, creating a mutually beneficial combination of value and profit.

Thrust 2—Information-based Product Development

This research thrust will provide a better understanding of the information-based product development process and will create more effective tools and methods to support product development activities. As a result, practitioners will be able to develop high-quality products faster and with less effort than is possible today.

Thrust 3—Enterprise Strategy

This research thrust will improve our understanding of the links between product strategy, capability strategy, and market environment. As a result, companies will have a richer understanding of the relationship between effective product development and the larger organizational and competitive contexts in which it is embedded.



Team work and prototype development are two major components of a senior design course entitled “Product Development Process.” This course is run by two CIPD faculty members, Professors David Wallace and Woodie Flowers.

Thrust 4—Accelerating Capabilities Improvement

This research thrust seeks to radically improve the speed with which new methods and knowledge are taken up by industry. As a result, networks of learning communities will be established that span academia and industry and rapidly improve product development capabilities through early internalization of both emergent and established best practices, processes, and technologies.



A student displays part of her team’s working prototype.

Education

CIPD intends to help students realize that product development is a “contact sport”—one that involves winners and losers, strong teams, star players, high stakes, successful strategies, and plenty of teamwork—and that it is an extremely exciting career choice.



A CIPD student discusses his research with an engineer from a partner company.

CIPD's objective is to establish instruction in the process of product development as a standard component of both engineering and management education throughout MIT and across the United States. We have set three goals for our education program.

- CIPD will provide leadership in organizing an interdisciplinary community of researchers, educators, and practitioners whose primary area of interest is innovative product development.
- CIPD will create educational materials to be used in university and industrial courses on product development.
- CIPD will formulate and test mechanisms to provide directed first-hand experiences in product development for students and faculty.

Industrial Collaboration/Technology Transfer

Our sponsoring companies have played, and will continue to play, a central role in defining the Center's research agenda. Each project team will include industrial collaborators from the Center's sponsoring companies. Research will be conducted at company sites, and many student members of our research teams will spend time in residence at these sites. Faculty supervisors will make frequent visits to the sites to interact with the industrial sponsors. Projects without active industrial participation will not be considered for support. The Center's strategy, simply stated, will be to involve our industrial collaborators as active partners in every phase of the Center's activity.



Students examine a board before assembling their working prototype.



Machining a part in the Pappalardo Laboratory.

Facilities

The Center's headquarters is located in the heart of MIT, on the fourth floor of the Mechanical Engineering Department (Building 3), which is located near the main entrance to MIT. Most Center engineering faculty, student labs, and offices are located contiguous to the Center headquarters. The Center Director is housed in the Mechanical Engineering Department. The Center's Research Director has established a Center presence in the MIT Sloan School of Management, which houses the remainder of the Center's faculty and students.

Center Headquarters

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